



5th

INTERNATIONAL CONFERENCE
ON STRUCTURAL HEALTH MONITORING
OF INTELLIGENT INFRASTRUCTURE
CANCÚN MÉXICO 2011



INSTITUTO
DE INGENIERÍA
UNAM



General Program

SHMII-5 2011
5th International Conference
on Structural Health Monitoring
of Intelligent Infrastructure

11-15 December 2011
The Ritz-Carton Hotel
Cancún, Quintana Roo, México

ISHMII

International Society for Structural Health Monitoring of Intelligent Infrastructure



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Phillippe Van Bogaert	Ghent University, Belgium
Helmut Woschitz	Graz University of Technology, Austria

Keynote Lectures

INTERPRETATION OF CORROSION MONITORING FROM EMBEDDED SENSORS

Carmen Andrade

Institute of Construction Science Eduardo Torroja Spain

COST-BENEFITS ANALYSIS IN SHM PROJECTS

Daniele Inaudi

Roctest Group

Switzerland

STRUCTURAL HEALTH MONITORING BY SMART TECHNICAL TEXTILES BASED ON FIBER OPTIC SENSORS

Katerina Krebber

BAM Federal Institute for Materials Research and Testing

Germany

RESEARCH AND PRACTICE ON STRUCTURAL HEALTH EVALUATION OF ANCIENT STONE MASONRY BUILDINGS IN MEXICO

Roberto Meli

Instituto de Ingeniería, UNAM

Mexico

OUT OF THE LAB, INTO THE FIELD: INTEGRATING MODERN SHM SYSTEMS ON REAL-WORLD STRUCTURES

David Potter

National Instruments

USA

THE AMAZING VERSATILITY OF FIBRE BRAGG GRATING SENSORS FOR INFRASTRUCTURE MONITORING

Hwayaw Tam

The Hong Kong Polytechnic University

Hong Kong SAR

Courses

Short Course on SHM

Structural health monitoring (SHM) is a process aimed at providing accurate and in-time information concerning structural health condition and performance. The information obtained from monitoring is generally used to increase the safety, plan and design maintenance activities, verify hypotheses, reduce uncertainty, and to widen the knowledge concerning the structure being monitored.

Recent developments in fiber optic sensing (FOS) technologies made possible global structural monitoring using long-gauge sensors and integrity monitoring using truly distributed sensors. These sensors combined in appropriate topologies and networks can provide for assessment of wide range of parameters relevant for structural behavior.

The aim of this course is to transfer the knowledge on SHM and FOS. Targeted groups are those who can take benefits from SHM: civil engineers, practitioners, consultants, contractors, infrastructure managers, and owners. Researchers on SHM are welcome too.

Covered topics include brief introduction to the SHM, overview of available FOS technologies, and SHM methods based on FOS technologies. The topics are illustrated through numerous examples taken from practice.

Instructional Workshop: Optical Fiber Bragg Grating Sensing Technology for SHM

The instructional workshop is the hands-on, experimental portion of the short course. This workshop will review the use and application of FBG sensors for strain & stress, acceleration, displacement, temperature and other parameters is made, along with discussions on sensor placement and installation, data analysis and interpretation. To reinforce the theoretical concepts and illustrate the practical aspects of the technology, a number of hands-on demonstrations of FBG sensors and instruments will be made.

This course will enable the participant to:

- Understand the operating principles, characteristics and advantages of optical fiber Bragg grating (FBG) sensors
- Review a wide range of sensor types for the measurement of materials properties and structural characteristics
- Learn the required building blocks that make up a SHM system
- Illustrate specific sensing solutions and their benefits in applications for civil structures, aerospace, composite materials, FRP elements, railways, naval vessels, oil and gas, and others.
- Obtain an overall view of fiber sensors, the SHM industry and its trends

Topics

- 1 Sensors and Instrumentation**
 - 1.1 Sensors Technology
 - 1.2 Wireless Sensing
 - 1.3 Advanced Sensor Networks and Integrated Systems
 - 1.4 Indirect Sensing
 - 1.5 Smart Sensors
 - 1.6 Energy Harvesting for SHM of Civil Infrastructure
 - 1.7 Calibration of Sensors and Sensor Systems
- 2 Signal Processing and Data Management**
 - 2.1 Data Mining
 - 2.2 Image Based Sensors and Analysis
 - 2.3 Measurement, Data Processing and Analysis
- 3 Structural Identification and Model Calibration**
 - 3.1 Wave Propagation
 - 3.2 Vibration and Modal Based Techniques
 - 3.3 Inverse Problems
 - 3.4 Neural Networks
 - 3.5 Genetic Optimization Algorithms
 - 3.6 Modeling and Simulation

- 4** **Structural Health Monitoring and Evaluation**
 - 4.1 Emerging Needs for Health Monitoring Techniques
 - 4.2 Non-Destructive Testing
 - 4.3 Bridge Monitoring and Inspection
 - 4.4 Monitoring of Heritage Structures
 - 4.5 SHM of Intelligent Infrastructure
 - 4.6 SHM Systems
 - 4.7 Structural Analysis and Modeling
 - 4.8 Innovations in Civil Structural Health Monitoring

- 5** **Structural Safety and Prognosis**
 - 5.1 Safety Analysis
 - 5.2 Damage Identification and Location
 - 5.3 Risk Assessment
 - 5.4 Structural Life Prognosis
 - 5.5 Reliability Assessment
 - 5.6 Deterioration Models and Simulations

- 6** **Vibration Control and Damping**
 - 6.1 Active and Semi-Active Control for Structural Systems
 - 6.2 Damping Systems for Intelligent Infrastructure
 - 6.3 Smart Materials and Structures

- 7** **Practical Applications**
 - 7.1 Field Applications
 - 7.2 SHM for Bridge Management Systems
 - 7.3 Applications of Bridge Weigh In Motions Systems
 - 7.4 SHM for Heritage Structures

- 8** **Damage Control, Repair and Strengthening**
 - 8.1 Damage Control, Repair and Strengthening

Technical Sessions

Number	Title	Room	Time
Monday December 12			
1	Sensors Technology 1	1	10:30 to 12:30
2	Bridge Monitoring and Inspection 1	2	
3	Civil Structural Health Monitoring	3	
4	Damage Identification and Risk Assessment	4	
5	Sensors Technology 2	1	14:30 to 16:30
6	Bridge Monitoring and Inspection 2	2	
7	Bridge Inspection and Analysis	3	
8	Modeling and Analysis	4	
9	Damage Control, Repair and Strengthening	1	17:00 to 18:00
10	Monitoring of Heritage Structures	2	
11	Field Applications 1	3	
12	Damage Identification and Location	4	
Tuesday December 13			
13	Sensors Technology 3	1	10:00 to 12:00
14	Bridge Monitoring and Inspection 3	2	
15	SHM of Intelligent Infrastructure and Field Applications	3	
Wednesday December 14			
16	Advanced Sensors and Data Mining	1	10:30 to 12:30
17	Field Applications 2	2	
18	Vibration and Inverse Techniques 1	3	
19	Reliability Assessment	1	14:30 to 16:30
20	Measurement, Data Processing and Analysis 1	2	
21	Vibration and Inverse Techniques 2	3	

Thursday December 15

22	Measurement, Data Processing and Analysis 2	1	9:30 to 11:30
23	Monitoring and Non-Destructive Testing	2	
24	Field Applications 3	3	

Daily Program

Monday, December 12				
	Room 1	Room 2	Room 3	Room 4
8:00 - 15:00	Registration			
8:30 - 9:00	Opening Ceremony			
9:00 - 10:00	Keynote Lecture			
10:00 - 10:30	Coffee Break			
10:30 - 12:30	Session 1: Sensors Technology	Session 2: Bridge Monitoring and Inspection	Session 3: Civil Structural Health Monitoring	Session 4: Damage Identification and Risk Assessment
12:30 - 13:30	Lunch			
13:30 - 14:30	Keynote Lecture			
14:30 - 16:30	Session 5: Sensors Technology	Session 6: Bridge Monitoring and Inspection	Session 7: Bridge Inspection and Analysis	Session 8: Modeling and Analysis
16:30 - 17:00	Coffee Break			
17:00 - 18:00	Session 9: Damage Control, Repair and Strengthening	Session 10: Monitoring of Heritage Structures	Session 11: Field Applications	Session 12: Damage Identification and Location

Daily Program

Tuesday, December 13			
	Room 1	Room 2	Room 3
8:00 - 12:00	Registration		
8:00 - 9:00	Keynote Lecture		
9:00 - 9:30	Plenary Session		
9:30 - 10:00	Coffee Break		
10:00 - 12:00	Session 13: Sensors Technology	Session 14: Bridge Monitoring and Inspection	Session 15: SHM of Intelligent Infrastructure and Field Applications
12:00 - 12:30	Boxed Lunch Pickup and Boarding of Buses		
12:30 - 18:00	Lunch, Tour and Conference Dinner		

Wednesday, Dec 14			
	Room 1	Room 2	Room 3
8:00 - 10:00	Registration		
9:00 - 10:00	Keynote Lecture		
10:00 - 10:30	Coffee Break		
10:30 - 12:30	Session 16: Advanced Sensors and Data Mining	Session 17: Field Applications	Session 18: Vibration and Inverse Techniques
12:30 - 13:30	Lunch		
13:30 - 14:30	Keynote Lecture		
14:30 - 16:15	Session 19: Reliability Assessment	Session 20: Measurement, Data Processing and Analysis	Session 21: Vibration and Inverse Techniques

Daily Program

Thursday, Dec 15			
	Room 1	Room 2	Room 3
8:00 - 9:00	Keynote Lecture		
9:00 - 9:30	Coffee Break		
9:30 - 11:30	Session 22: Measurement, Data Processing and Analysis	Session 23: Monitoring and Non-Destructive Testing	Session 24: Field Applications
11:30 - 12:00	General Issues		
12:00 - 12:30	Closing Ceremony		

Detailed Daily Program

Sunday

December 11

8:00 - 15:00	Registration
8:30 - 17:00	ISHMII Council Meeting Tulum Room
9:40 - 11:40	Short Course on SHM (Part I)
11:40 - 12:00	Coffee Break
12:00 - 14:00	Short Course on SHM (Part II)
14:00 - 14:20	Lunch
14:20 - 17:00	Instructional Workshop: Optical Fiber Bragg Grating Sensing Technology for SHM
18:00 -20:00	Welcome Reception Pool Area

Monday

December 12

8:00 - 15:00	Registration
8:30 - 9:00	Opening Ceremony
9:00 - 10:00	Keynote Lecture COST-BENEFITS ANALYSIS IN SHM PROJECTS Daniele Inaudi
10:00 - 10:30	Coffee Break
10:30 - 12:30	Oral Sessions 1-4 Rooms 1- 4
12:30 - 13:30	Lunch
13:30 - 14:30	Keynote Lecture RESEARCH AND PRACTICE ON STRUCTURAL HEALTH EVALUATION OF ANCIENT STONE MASONRY BUILDINGS IN MEXICO Roberto Meli
14:30 - 16:30	Oral Sessions 5-8 Rooms 1- 4
16:30 - 17:00	Coffee Break
17:00 - 18:00	Oral Sessions 9-12 Rooms 1- 4

Room 1 / Monday, December 12

Session 1: Sensors Technology 1

Chair: Aftab Mufti

Co-chair: David Murià-Vila

10:30 - 10:50	Topic 1.5 EXPERIMENTAL STUDY ON DEVELOPING SMART ANCHOR HEAD Young-Jun You, Ki-Tae Park, Kyu-Wan Lee
10:50 - 11:10	Topic 1.7 PARAMETER ESTIMATION FOR A CONCRETE BEAM FROM EXPERIMENTS USING FIBER-OPTIC STRAIN GAGES Pradipta Banerji, Sanjay Chikermame, Richard Scott, Ken Grattan, Tong Sun, Fredric Surre
11:10 - 11:30	Topic 1.1 EXPERIMENTAL STUDY OF A SOIL-EMBEDDED FIBRE OPTIC STRAIN SENSOR CROSSING AN ARTIFICIAL SHEAR ZONE Dominik Hauswirth, Michael Iten, Alexander M. Puzrin
11:30 - 11:50	Topic 1.2 MONITORING OF MOISTURE IN MASONRY STONES USING A WIRELESS LC RESONANT SENSOR Jun Hui Zhao, Douglas John Thomson, Mohammad Udin, Aftab Mufti
11:50 - 12:10	Topic 1.5 RESEARCH ON BOTDR/A BASED DISTRIBUTED OPTICAL SENSING TECHNIQUE IN STRUCTURAL HEALTH MONITORING Xuefeng Zhao, Le Li, Yusong Gong, Xiyong Ye, Xingyue Su
12:10 - 12:30	Topic 1.1 REVIEW OF FIBER OPTIC SENSORS AND PZT TRANSDUCERS FOR MONITORING OF CONCRETE STRUCTURES IN NUCLEAR INDUSTRY Amir Mosavi, Hassan Sedarat, Maria Guimaraes

Room 1 / Monday, December 12

Session 5: Sensors Technology 2

Chair: Hans de Backer

Co-chair: Alfredo Chávez Plascencia

14:30 - 14:50	Topic 1.2 WIRELESS SENSOR NETWORK SYSTEMS FOR STRUCTURAL HEALTH MONITORING OF BUILDING STRUCTURE Marian Gizejowski, Edward Antoszkiewicz, Stanislaw Wierzbicki, Zbigniew Pioro
14:50 - 15:10	Topic 1.5 IMPEDANCE-BASED SMART AGGREGATE FOR DAMAGE MONITORING IN A CONCRETE GRAVITY DAM MODEL Xin Feng, Yaoguo Shen, Talagbe Dandjekpo, Tong Zhu, Jing Zhou
15:10 - 15:30	Topic 1.2 DESIGN OF LOW COST WIRELESS SENSOR NETWORK FOR HEALTH MONITORING OF LARGER STRUCTURES Prasad Chougule, Alfredo Plascencia
15:30 - 15:50	Topic 1.2 WIRELESS STRAIN MEASUREMENTS IN SHIELD-DRIVEN TUNNELS Ken Schotte, Hans de Backer, Philippe Van Bogaert
15:50 - 16:10	Topic 1.1 DYNAMIC AND ADAPTIVE MULTI-POINT FIBER OPTIC ACOUSTIC EMISSION SENSOR (FAESENSE™) SYSTEM Edgar Mendoza, John Prohaska, Connie Kempen, Yan Esterkin, Sunjian Sun, Sridhar Krishnaswamy
16:10 - 16:30	Topic 1.1 AMPLIFIER DESIGN FOR AN EXTENSOMETER IN HIGH TEMPERATURE DEFORMATION MONITORING Xiaoyin Hu, JiuHong Jia, Shantung Tu

Room 1 / Monday, December 12

Session 9: Damage Control, Repair and Strengthening

Chair: Enrique Bazán Zurita

Co-chair: José Alfredo López

17:00 - 17:20	Topic 8.1 CONTRIBUTION TO RETROFITTING CONCRETE STRUCTURES BY EXTERNAL REINFORCING SYSTEM Amando Padilla Ramírez, Antonio Flores Bustamante, Iván Panamá Armendariz, Francisco González Díaz
17:20 - 17:40	Topic 8.1 MITIGATION AND MONITORING OF STRUCTURAL DISTRESS IN AN ELECTRICAL SUBSTATION DUE TO MINE SUBSIDENCE Enrique Bazan-Zurita, Phil Glogowsky, Paul Cass, Alan Nichols
17:40 - 18:00	Topic 8.1 DATA ACQUISITION AND ANALYTICAL MODEL FOR DESIGN OF FRP RETROFITTED RC BEAM-COLUMN JOINTS Seyed Saeed Mahini

Room 2 / Monday, December 12

Session 2: Bridge Monitoring and Inspection

Chair: Philippe Van Bogaert

Co-chair: Roberto Gómez

10:30 - 10:50	Topic 4.3 EXPERIMENTAL INVESTIGATION OF DRIVE-BY BRIDGE INSPECTION Chul-Woo Kim, Ryo Isemoto, Tatsuaki Toshinami, Mitsuo Kawatani, Patrick Mc Getrick, Eugene O Brien
10:50 - 11:10	Topic 4.3 REMOTE STRUCTURAL MONITORING SYSTEMS - PROVIDING LONG-TERM CONFIDENCE IN A STRUCTURE'S CONDITION Roman Berger, Gianni Moor, Thomas Spuler, Carlos Mendez
11:10 - 11:30	Topic 4.3 ACCURACY OF LOAD TEST ON A DOUBLE-CURVED CLOSED SECTION STEEL VIADUCT Philippe Van Bogaert
11:30 - 11:50	Topic 4.3 ISSUES AND SOLUTIONS ASSOCIATED WITH REMOTE SENSING APPLICATIONS FOR BRIDGE MONITORING Shen-En Chen, Edd Hauser, Chuck Boyle, Kelly Rehm
11:50 - 12:10	Topic 4.3 BRIDGE MONITORING WITH FIBER OPTICS TECHNOLOGY. AN EXAMPLE OF DYNAMIC TRAFFIC LOAD MONITORING IN MEXICAN BRIDGES Juan José Orozco y Orozco, Leonardo Bounatian-Benatov, Fernando Sánchez-Domínguez
12:10 - 12:30	Topic 4.3 MONITORING BASED PERFORMANCE INDICATORS FOR THE ASSESSMENT OF JOINTLESS BRIDGE STRUCTURE Alfred Strauss, Roman Wender, Dan M. Frangopol

Session 6: Bridge Monitoring and Inspection

Chair: Thomas Tannert

Co-chair: Gerardo Aguilar

14:30 - 14:50	Topic 4.3 REMOTE MOISTURE MONITORING OF TIMBER BRIDGES Thomas Tannert, Roman Berger, Mareike Vogel
14:50 - 15:10	Topic 4.3 DAMAGE ASSESSMENT OF RC SLABS USING A PRACTICAL ENSEMBLE SYSTEM FOR MULTIPLE FEATURE SELECTION Nakatsu Koichiro, Furuta Hitoshi, Nomura Yasutoshi, Takahashi Kyosuke, Ishibashi Ken, Hayakawa Yuji
15:10 - 15:30	Topic 4.3 FLEXURAL-SHEAR FAILURE OF A FULL SCALE TESTED RC BRIDGE STRENGTHENED WITH NSM CFRP Björn Täljsten, Jonny Nilimaa, Gabriel Sas, Thomas Blanksvärd
15:30 - 15:50	Topic 4.3 STRUCTURAL HEALTH MONITORING OF THE INDIAN RIVER INLET BRIDGE Harray W. Tripp Shenton III, Patrick Daniel Carson, Gary Wenzel, Michael J. Chajes
15:50 - 16:10	Topic 4.3 EXPERIENCES WITH SHM FOR LARGE CIVIL STRUCTURES Hans de Backer, Amelie Outtier, Ken Schotte, Dries Stael, Wim Nagy, Philippe Van Bogaert
16:10 - 16:30	Topic 4.3 ONE YEAR VIBRATION MONITORING OF A SHORT SPAN BRIDGE UNDER IN-SERVICE ENVIRONMENTS Chul-Woo Kim, Toshiki Sakakibara, Ryo Isemoto, Heng Salpisoth, Yoshinobu Oshima, Kunitomo Sugiura

Room 2 / Monday, December 12

Session 10: Monitoring of Heritage Structures

Chair: Filippo Casarin

Co-chair: Roberto Meli

17:00 - 17:20	Topic 4.4 CONCEPT AND DESIGN OF A WIRELESS REMOTE MONITORING SYSTEM FOR THE AQUEDUCT OF QUERETARO Roberto Alvarado-Cardenas, Alejandro Aragon-Zavala, Eduardo Rosado Colmenares, Cesar Cardenas Perez, Francisco Javier Carrión-Viramontes
17:20 - 17:40	Topic 4.4 STRUCTURAL HEALTH MONITORING OF HISTORICAL BUILDINGS: PREVENTIVE AND POST-EARTHQUAKE CONTROLS Filippo Casarin
17:40 - 18:00	Topic 4.4 THE MONITORING OF BARCELONA'S SAGRADA FAMILIA CHURCH WITH FIBER OPTIC TECHNOLOGY. CONTROL OF THE CONSTRUCTION OF A NEARBY TUNNEL Leonardo Bounatian-Benatov, Fernando Sánchez-Domínguez, Ignacio Poy-Lopez

Room 3 / Monday, December 12

Session 3: Civil Structural Health Monitoring

Chair: Genda Chen

Co-chair: José Alberto Escobar

10:30 - 10:50	Topic 4.8 STRUCTURAL HEALTH MONITORING IN CIVIL INFRASTRUCTURE APPLICATIONS - NEW PERSPECTIVES Genda Chen
10:50 - 11:10	Topic 4.8 SATELLITE SENSING TECHNOLOGY TO MONITOR BRIDGES AND OTHER CIVIL INFRASTRUCTURES Daniel Cusson, Parwant Ghuman, Andrian Mccardle
11:10 - 11:30	Topic 4.8 EXPERIMENTAL TESTS OF REINFORCED CONCRETE BUILDINGS AND ENEA DYSCO VIRTUAL LABORATORY Marialuisa Mongelli, Gerardo de Canio, Ivan Roselli, Massimiliano Baldini, Alessandro Colucci, Francesco Di Biagio, Alessandro Picca, Angelo Tati, Nicolò Cancelliere, Luigi Coniglio, Aurelio Ghersi
11:30 - 11:50	Topic 4.8 A PROVEN STANDARD FOR BRIDGE HEALTH MONITORING SYSTEMS Alexandre Chaperon, Gilles Hovhanessian
11:50 - 12:10	Topic 4.8 DYNAMIC CHARACTERIZATION OF CIVIL STRUCTURES USING MOBILE SENSORS Johannio Marulanda, Juan Martín Caicedo, Peter Thomson
12:10 - 12:30	Topic 4.7 MONITORING OF WIND VELOCITIES AND THEIR USE TO STUDY THE WIND-INDUCED STRUCTURAL BEHAVIOR OF THE BALUARTE BRIDGE DURING CONSTRUCTION STAGE Adrián Pozos-Estrada, Roberto Gómez-Martínez, Raúl Sánchez-García, Luis Martín Arenas-García, José Alberto Escobar-Sánchez

Room 3 / Monday, December 12

Session 7: Bridge Inspection and Analysis

Chair: Branko Glisic

Co-chair: Alfred Strauss

14:30 - 14:50	Topic 4.3 MONITORING AND VISUAL INSPECTION OF NEW JERSEY REFERENCE BRIDGES Di Su, Dionysius M Siringoringo, Tomonori Nagayama, Yozo Fujino
14:50 - 15:10	Topic 4.3 STRUCTURAL HEALTH MONITORING OF STEEL AND COMPOSITE BRIDGES IN RUDBAR-MANJIL REGION IN IRAN Mehdi Mohammadpour Lima
15:10 - 15:30	Topic 4.7 MEASURING GEOMETRICAL OUT-OF-PLANE IMPERFECTIONS IN STEEL TIED ARCH BRIDGES Amelie Outtier, Hans de Backer, Bart de Pauw, Philippe Van Bogaert
15:30 - 15:50	Topic 4.3 STREICKER BRIDGE: ASSESSMENT OF STRUCTURAL HEALTH CONDITION THROUGH STATIC AND DYNAMIC MONITORING Branko Glisic, David Hubbel, Dorotea Sigurdardottir, Jeremy Chen, Jose Pedro Sousa Afonso
15:50 - 16:10	Topic 4.2 EXPERIMENTALLY DETERMINED STOCHASTIC PROPERTIES OF CONCRETE Alfred Strauss, Herwig Mayer, David Lehky, Dan M. Frangopol
16:10 - 16:30	Topic 5.2 ESTIMATION OF STRUCTURAL HEALTH IN CONCRETE BRIDGE DECKS: A STUDY CASE Antonio Javier Garcia Palencia, Erin Santini-Bell

Room 3 / Monday, December 12

Session 11: Field Applications 1

Chair: Hwayaw Tamm

Co-chair: Sergio M. Alcocer

17:00 - 17:20	Topic 7.1 FIELD MONITORING OF REINFORCED CONCRETE BRIDGE BARRIERS REINFORCED WITH GFRP AND STEEL BARS Ehab Ahmed, Jean-Francois Claude, Brahim Benmokrane, Daniel Cusson
17:20 - 17:40	Topic 7.1 LONG-TERM MONITORING OF LAUIER-TACHE PARKING GARAGE USING DIFFERENT SENSORS AND TECHNIQUES Ehab Ahmed, Brahim Benmokrane, Allan Wiseman
17:40 - 18:00	Topic 7.1 MONITORING OF A LARGE DIAMETER PILE LOAD TEST WITH OPTICAL STRANDS. BRIDGE OVER THE RIVER RIO NEGRO (BRAZIL) Fernando Sánchez-Domínguez, Leonardo Bounatian- Benatov, Carlos Henrique Souza Da Silva

Room 4 / Monday, December 12

Session 4: Damage Identification and Risk Assessment

Chair: Roman Berger

Co-chair: Ramsés Rodríguez-Rocha

10:30 - 10:50	Topic 5.2 DAMAGE DETECTION IN BUILDINGS CONSIDERING SOIL-STRUCTURE INTERACTION, UTILIZING THE BASELINE STIFFNESS METHOD Josué García Solano, Ramsés Rodríguez Rocha
10:50 - 11:10	Topic 5.2 A COMPARISON BETWEEN TWO WAVELET BASED DAMAGE DETECTION APPROACHES TO FIND CRACKS IN A BEAM SUBJECTED TO A MOVING LOAD Amir Khorram, Firooz Bakhtiari Nezhad, Mohsen Rezaeian
11:10 - 11:30	Topic 5.2 RELIABILITY ISSUES IN DAMAGE IDENTIFICATION VIA STRUCTURAL HEALTH MONITORING Andrea del Grosso, Francesca Lanata
11:30 - 11:50	Topic 5.2 COMPARISON OF SIGNAL PROCESSING METHODS: ICA AND WAVELET; MODAL PARAMETERS EXTRACTION Jose Rodrigo Pacheco Vivero, Eduardo Gomez Ramirez, Francisco José Rivero Angeles, Ramsés Rodríguez Rocha, Mauricio Martínez
11:50 - 12:10	Topic 5.3 DIAGNOSIS AND PROGNOSIS OF STONECUTTERS BRIDGE BASED ON STRUCTURAL HEALTH MONITORING SYSTEM Songye Zhu, You-Lin Xu, Kai-Yuen Wong, Yue Zhen, Shunlong Li, Wen-Feng Huang, Liang Hu
12:10 - 12:30	Topic 5.2 NDE BY MEANS OF AUTOMATED STRUCTURAL HEALTH MONITORING - SAVING COSTLY BRIDGE REPAIR WORKS Roman Berger, Thomas Spuler, Gianni Moor, Carlos Mendez

Session 8: Modeling and Analysis

Chair: Douglas Thomson

Co-chair: Francisco Carrión

14:30 - 14:50	Topic 3.3 RESTORING FORCE AND EXCITATION IDENTIFICATION FOR A NONLINEAR SYSTEM WITH DUFFING OSCILLATOR Jia He, Bin Xu, Sami F. Masri
14:50 - 15:10	Topic 3.6 ASSESSMENT OF A CASE STUDY SUBWAY NATM TUNNEL DESIGN MODEL BASE ON FIELD MEASUREMENT RESULTS Mohammad Mehdi Amiri
15:10 - 15:30	Topic 3.5 IMPLEMENTATION OF GENETIC ALGORITHMS IN A SYSTEM IDENTIFICATION METHOD FOR INSTRUMENTED BUILDINGS José Camargo, David Murià-Vila
15:30 - 15:50	Topic 3.3 AN EFFECTIVE METHOD FOR LOCATING DAMAGE ELEMENTS BY PARALLEL OPTIMIZATION OF FINITE ELEMENT MODEL PARAMETERS Zheng Yi Wu, Guoqing Xu
15:50 - 16:10	Topic 3.3 IDENTIFICATION OF SUBSTRUCTURAL VIBRATION PROPERTIES FROM GLOBAL MEASUREMENTS Yong Xia, Shun Weng, You-Lin Xu
16:10 - 16:30	Topic 3.1 SYSTEM IDENTIFICATION AND RESPONSE PREDICTION USING IMPULSE RESPONSE FROM AMBIENT NOISE MEASUREMENTS OF INSTRUMENTED BUILDINGS IN SINGAPORE Haitao Zheng, Kusnowidjaja Megawati

Room 4 / Monday, December 12

Session 12: Damage Identification and Location

Chair: John Newhook

Co-chair: Didem Ozevin

17:00 - 17:20	Topic 5.2 ASSESSMENT OF BURIED PIPELINES HEALTH CONDITION USING DISTRIBUTED FIBER OPTIC SENSORS Branko Glisic, Yao Yao, Kai Oberste-Ufer
17:20 - 17:40	Topic 5.2 VIBRATION-BASED DETECTION OF SUPPORT DETERIORATION UNDER A SIMPLY SUPPORTED TIMBER BRIDGE Cameron J Beauregard, Leon D Wegner, Bruce F Sparling
17:40 - 18:00	Topic Topic 5.2 IMPROVED ACOUSTIC EMISSION SOURCE LOCALIZATION WITH PROBABILISTIC METHODS Didem Ozevin

Detailed Daily Program

Tuesday December 13

8:00 - 12:00	Registration
8:00 - 9:00	Keynote Lecture STRUCTURAL HEALTH MONITORING BY SMART TECHNICAL TEXTILES BASED ON FIBER OPTIC SENSORS Katerina Krebber
9:00 - 9:30	Plenary Session AFTAB MUFTI MEDAL AND BEST PAPER AWARDS Farhad Ansari
9:30 - 10:00	Coffee Break
10:00 - 12:00	Oral Sessions 13-15 Rooms 1-3
12:00 - 12:30	Boxed Lunch Pickup and Boarding of Buses
12:30 - 18:00	Lunch, Tour and Conference Dinner

Room 1 / Tuesday, December 13

Session 13: Sensors Technology 3

Chair: Katerina Krebber

Co-chair: David Potter

10:00 - 10:20	Topic 1.6 POWERING WIRELESS SENSORS VIA REGENERATIVE ELECTROMAGNETIC TMD Wenai Shen, Songye Zhu, Yu-lin Xu
10:20 - 10:40	Topic 1.3 MEMSCON PROJECT: WIRELESS SENSOR NETWORK FOR POST-EARTHQUAKE EVALUATION OF CONCRETE BUILDINGS Matthaios Bimpas, Angelos Amditis, Stamatia Frondistou, Vasilis Kalidromitis, Davide Trapani, Daniele Zonta, Yorgos Stratakos, Anastasios Gkaretsos
10:40 - 11:00	Topic 1.1 FBG BASED EMBEDDABLE STRAIN SENSOR: NEW DEVELOPMENT Julien Tremblay, Hany Tobbi, Brahim Benmokrane
11:00 - 11:20	Topic 1.1 SENSING SHEET FOR SHM BASED ON LARGE AREA ELECTRONICS Branko Glisic, Naveen Verma, Yao Yao
11:20 - 11:40	Topic 1.5 RUGGED BLOCK-BASED DISPLACEMENT MONITORING FOR STRUCTURES UNDER EXTREME ENVIRONMENT Shenghua Jiang, Zhi Zhou, Minghua Huang, Jinping Ou
11:40 - 12:00	Topic 1.3 POLYMERBASED PIEZOELECTRIC MODULES BY MICROINJECTION MOULDING TECHNOLOGY FOR SHM Michael Heinrich, Robert Schulze, Michael Wegener, Lothar Kroll, Marco Walther, Martin Schuller, Thomas Gebner

Session 14: Bridge Monitoring and Inspection 3

Chair: Farhad Ansari

Co-chair: Alexis Méndez

10:00 - 10:20	Topic 4.3 MEASUREMENT SYSTEM DESIGN FOR DAMAGE DETECTION USING MODEL-FREE DATA INTERPRETATION METHODS Irwanda Laory, Thanh N. Trinh, Nizar Bel Hadj Ali, Ian F. C. Smith
10:20 - 10:40	Topic 4.3 ALARM SETTING METHODOLOGY FOR THE MONITORING OF CABLES IN A STAYED BRIDGE Juan Antonio Quintana-Rodríguez, Francisco Javier Carrión-Viramontes, José Alfredo López-López, Didier Samayoa Ochoa
10:40 - 11:00	Topic 4.3 A SHM-ORIENTED TEST-BED FOR LONG-SPAN SUSPENSION BRIDGES:SETTLEMENT STUDY You-Lin Xu, Xiaohua Zhang, Songye Zhu, Sheng Zhan, Hwayaw Tam, Hoyin Au
11:00 - 11:20	Topic 4.3 SHM APPLICATION FOR MONITORING OF EXISTING BRIDGE PIER DURING CONSTRUCTION OF A WATER CHANNEL ADJACENT TO PIER FOUNDATION Vidya Limaye
11:20 - 11:40	Topic 4.3 APPLICATION OF FBG SENSORS TO MONITOR THE CABLE FORCES IN A SMALL-SCALE CABLE-STAYED BRIDGE MODEL Xin Feng, Zhe Fan, Jian Hu, Liang Ren, Jing Zhou

Room 3 / Tuesday, December 13

Session 15: SHM of Intelligent Infrastructure and Field Applications

Chair: Paul Sumitro

Co-chair: Roberto Gómez

10:00 - 10:20	Topic 4.5 MONITORING OF CORROSION PROTECTION IN REINFORCED CONCRETE STRUCTURES USING AN INTEGRATED PH OPTODE Ralf Roeben, Roland Huettl, Mathis Kuczejda, Wolfgang R. Habel, Marek Hoehse
10:20 - 10:40	Topic 4.5 COMMERCIAL REMOTE SENSING AND SPATIAL INFORMATION TECHNOLOGIES IN TRANSPORTATION Caesar Singh
10:40 - 11:00	Topic 4.5 INTEGRATION FOR TRADITIONAL AND NON-TRADITIONAL REMOTE SENSING TECHNOLOGIES INTO STRUCTURAL HEALTH MONITORING FOR LONG-TERM CONDITION ASSESSMENT Tess Ahlborn, D.K. Harris, C.N. Brooks, L.I. Sutter
11:00 - 11:20	Topic 4.5 EYE IN THE SKY: ISSUES WITH SUB-INCH AERIAL IMAGING OF BRIDGE DECKS Shen-En Chen, Chuck Boyle, Meenu Natarajan, Edd Hauser
11:20 - 11:40	Topic 4.5 CORROSION MONITORING BY UTILIZING EM TECHNOLOGY Paul Sumitro
11:40 - 12:00	Topic 7.1 BRICK CHIMNEY REAL-TIME MONITORING REINFORCEMENT WITH AN EXTERNAL POST-TENSIONING SYSTEM Carles Cots

Detailed Daily Program

Wednesday December 14

8:00 - 10:00	Registration
9:00 - 10:00	Keynote Lecture INTERPRETATION OF CORROSION MONITORING FROM EMBEDDED SENSORS Carmen Andrade
10:00 - 10:30	Coffee Break
10:30 - 12:30	Oral Sessions 16-18 Rooms 1-3
12:30 - 13:30	Lunch
13:30 - 14:30	Keynote Lecture THE AMAZING VERSATILITY OF FIBRE BRAGG GRATING SENSORS FOR INFRASTRUCTURE MONITORING Hwayaw Tam
14:30 - 16:10	Oral Sessions 19-21 Rooms 1-3

Room 1 / Wednesday, December 14

Session 16: Advanced Sensors and Data Mining

Chair: Daniele Inaudi

Co-chair: Gerardo Aguilar

10:30 - 10:50	Topic 1.3 LOCALIZATION OF INSTABILITY ZONES IN LEVEES, LANDSLIDES, SINKHOLES AND TUNNELS WITH DISTRIBUTED OPTICAL FIBER SENSORS Daniele Inaudi, Riccardo Belli
10:50 - 11:10	Topic 1.3 DISTRIBUTED REMOTE WIRELESS BRIDGE MONITORING SYSTEM Jian Su, Jinqun Zhang, Yulong Zhu, Jian Mao, Wanheng Li, Shuri Cai
11:10 - 11:30	Topic 1.2 DESIGN AND EXPERIMENTAL VALIDATION OF LOW- FREQUENCY WIRELESS VIBRATION DATA ACQUISITION SYSTEM FOR OFFSHORE PLATFORM Yan Yu, Zhirui Li, Jie Wang, Jinping Ou
11:30 - 11:50	Topic 1.7 EXPERIMENTAL VERIFICATION OF A NOVEL LOAD DEPENDENT SENSOR PLACEMENT METHOD Dongsheng Li
11:50 - 12:10	Topic 2.1 SHM DATA MANAGEMENT SYSTEM USING MYSQL DATABASES AND MATLAB INTERFACES Ki-Young Koo, Nicky de Battista, James M. W. Brownjohn

Room 1 / Wednesday, December 14

Session 19: Reliability Assessment

Chair: David de León

Co-chair: Juan A. Quintana

14:30 - 14:50	Topic 5.4 PROGNOSIS AND RELIABILITY ANALYSIS OF A STAYED BRIDGE USING MONTE CARLO SIMULATION Francisco Javier Carrión-Viramontes, Juan Antonio Quintana-Rodríguez, José Alfredo López-López
14:50 - 15:10	Topic 5.5 FATIGUE AND RELIABILITY ANALYSIS OF LONG SPAN SUSPENSION BRIDGES WITH SHMS You-Lin Xu, Zhi-Wei Chen, Yong Xia
15:10 - 15:30	Topic 5.5 PROBABILISTIC STRUCTURAL HEALTH ASSESSMENT OF AEROSPACE STRUCTURES Jose Garcia, Carlos Ferregut, Shu Guo, Michael Cowan
15:30 - 15:50	Topic 5.5 VEHICULAR BRIDGES PIERS RELIABILITY: THE CASE OF THE STATE OF MEXICO David Joaquin Delgado Hernandez, Juan Carlos Arteaga-Arcos, David de Leon Escobedo, Jair Gonzalez Rojas, Jose Omar Jimenez Miranda, Luis Horacio Martinez Martinez, Jose Emmanuel Rivero Santana
15:50 - 16:10	Topic 5.6 ANALYSIS OF DETERIORATION DUE TO FATIGUE AND PROGNOSIS OF A TYPICAL CONCRETE BRIDGE, USING MONTE CARLO SIMULATION Saúl Enrique Crespo Sánchez, Francisco Javier Carrión-Viramontes, Miguel Ángel Pérez Lara y Hernández

Room 2 / Wednesday, December 14

Session 17: Field Applications 2

Chair: Helmut Woschitz

Co-chair: David Murià-Vila

10:30 - 10:50	Topic 4.6 STRUCTURAL HEALTH MONITORING OF A HIGH SPEED RAILWAY VIADUCT Justo Carretero Pérez, Javier Cortezo García
10:50 - 11:10	Topic 7.1 VALIDATING DATA PRIOR TO INTERPRETATION TO MINIMIZE UNCERTAINTY IN MANAGEMENT DECISIONS Joshua Levy, John Newhook, Peter Buckland
11:10 - 11:30	Topic 7.1 EXAMPLE OF A SERBIAN-FRENCH COLLABORATION IN THE FIELD OF INFRASTRUCTURE MANAGEMENT Alexandre Chaperon
11:30 - 11:50	Topic 7.1 DEVELOPMENT OF A RAIL STRAIN PAD USING FBG Helmut Woschitz
11:50 - 12:10	Topic 7.1 TRANSANDEAN PIPELINES GEOHAZARD PREVENTION WITH DISTRIBUTED FIBER OPTIC SENSING Fabien Ravet, Edilberto Gutierrez Ortiz
12:10 - 12:30	Topic 7.1 AUTOMATIC PORTABLE SYSTEM FOR FAULT DETECTION IN THE PAVEMENT OF ROADS AND BRIDGES USING WIRELESS SENSORS AND GLOBAL POSITION SYSTEM (GPS) Alfonso Poncela, Victor de Diego, Antolín Lorenzana, Jesús de Sebastián

Session 20: Measurement, Data Processing and Analysis 1

Chair: Wolfgang Habel

Co-chair: Ramsés Rodríguez-Rocha

14:30 - 14:50	Topic 2.3 VALIDATION OF STRAIN SENSORS TO ACHIEVE RELIABLE MEASUREMENT RESULTS Wolfgang R. Habel, Vivien G. Schukar
14:50 - 15:10	Topic 2.3 ACOUSTIC SIGNAL DISCRIMINATION IN PRESTRESSED CONCRETE ELEMENTS BASED ON STATISTICAL CRITERIA Malgorzata Kalicka, Thomas Vogel
15:10 - 15:30	Topic 2.3 NUMERICAL STUDY IN THE OPTIMAL POSITION OF SENSORS FOR MODAL PARAMETERS EXTRACTION IN WELDED STEEL CATENARY RISERS Victor Felipe Hernandez-Abraham, Ramsés Rodríguez Rocha, Francisco Javier Rivero-Angeles, Alberto Omar Vázquez-Hernández
15:30 - 15:50	Topic 2.3 NUMERICAL EVALUATION OF WAVELET BASED DAMAGE DETECTION METHODOLOGIES APPLIED TO RC MEMBERS Luis R Velázquez, Luis A Montejó

Session 18: Vibration and Inverse Techniques 1

Chair: Ian Smith

Co-chair: Francisco Carrión

10:30 - 10:50	Topic 3.3 GENERATING ALTERNATIVES FROM MULTIPLE MODELS: HOW TO INCREASE ROBUSTNESS IN PARAMETRIC SYSTEM IDENTIFICATION Emiliano Matta, Alessandro de Stefano
10:50 - 11:10	Topic 3.3 LOAD ESTIMATION OF IMPACT LOADS FROM STRAIN RESPONSE DATA FOR A MODEL BRIDGE USING AN OUTPUT-ONLY DATA APPROACH Sanjay Chikermane, Pradipta Banerji, Bulusu Vishwanath
11:10 - 11:30	Topic 3.3 PREVENTION OF OVER-INSTRUMENTATION DURING THE DESIGN OF A MONITORING SYSTEM James-A. Goulet, Ian F. C. Smith
11:30 - 11:50	Topic 3.2 POST-EARTHQUAKE DYNAMIC BEHAVIOR OF A CONCRETE BUILDING Giacomo Buffarini, Paolo Clemente, Fernando Saitta
11:50 - 12:10	Topic 3.2 PERIOD VARIATIONS IN A SHEAR WALL BUILDING DUE TO EARTHQUAKE SHAKING Ruben Boroschek, Rodrigo Carreno
12:10 - 12:30	Topic 3.3 PIECEWISE LINEAR AND NONLINEAR RESTORING FORCE IDENTIFICATION OF A MDOF DYNAMIC SYSTEM Guokai Yuan, Bin Xu, Sami F. Masri

Room 3 / Wednesday, December 14

Session 21: Vibration and Inverse Techniques 2

Chair: Genda Chen

Co-chair: Alexis Méndez

14:30 - 14:50	Topic 3.2 EVALUATION OF THE STRUCTURAL HEALTH AND CONDITION FOR FUTURE MODIFICATIONS AND ENHANCEMENT OF LIFE CYCLE OF A STEEL BRIDGE IN MÉXICO BASED ON THE EVOLUTION OF ITS DYNAMIC PROPERTIES A Gustavo Ayala
14:50 - 15:10	Topic 3.2 A STUDY ON THE DYNAMIC RESPONSE OF A CRACKED BEAM SUBJECTED TO A MOVING LOAD Amir Khorram, Firooz Bakhtiari Nezhad, Mohsen Rezaeian
15:10 - 15:30	Topic 3.2 EXPERIMENTAL TESTS AND SEISMIC PERFORMANCE OF A CONCRETE BRIDGE Paolo Clemente, Nicola Impollonia, Fernando Saitta, Stefano Zito
15:30 - 15:50	Topic 3.2 A HILBERT TRANSFORM METHOD FOR SYSTEM IDENTIFICATION OF TIME-VARYING STRUCTURES Zuocai Wang, Genda Chen

Detailed Daily Program

Thursday December 15

8:00 - 9:00	Keynote Lecture OUT OF THE LAB, INTO THE FIELD: INTEGRATING MODERN SHM SYSTEMS ON REAL-WORLD STRUCTURES David Potter
9:00 - 9:30	Coffee Break
9:30 - 11:30	Oral Sessions 22-24 Rooms 1-3
11:30 - 12:00	General Issues
12:00 - 12:30	Closing Ceremony
14:00 - 17:00	JCSHM Editorial Board Meeting Tulum Room

Room 1 / Thursday, December 15

Session 22: Measurement, Data Processing and Analysis

Chair: Jinping Ou

Co-chair: José Alberto Escobar

9:30 - 9:50	Topic 2.3 SHM MEASUREMENT STABILITY AND COMPENSATION METHODS Dean Mc Neill
9:50 - 10:10	Topic 2.3 INSTRUMENTATION AND MONITORING OF AN EXISTING SUBWAY LINE DURING CONSTRUCTION OF A NEW SUBWAY LINE IN MEXICO CITY Jesús Morelos Reyes, Yolanda Alberto-Hernández, Elías Antolín Tavera Gutiérrez
10:10 - 10:30	Topic 2.3 STRUCTURAL DAMAGE DETECTION USING MEASURED FREQUENCY RESPONSE FUNCTION (FRF) DATA AND ARTIFICIAL NEURAL NETWORKS (ANNS) Rupika P. Bandara, Tommy Hung Tin Chan, David P. Thambiratnam
10:30 - 10:50	Topic 2.3 RECORDING TIMBER BRIDGE GIRDER DEFLECTIONS USING A LASER REFERENCE SOURCE AND A HIGH SPEED CAMERA John C. Moore, Seyed Saeed Mahini, Rex Glencross-Grant, Robert Patterson
10:50 - 11:10	Topic 2.3 DATA LOSS RECOVERY FOR WIRELESS SENSOR NETWORKS BASED ON COMPRESSIVE SAMPLING TECHNIQUES Yuequan Bao, Hui Li, Jinping Ou

Room 2 / Thursday, December 15

Session 23: Monitoring and Non-Destructive Testing

Chair: Alessandro De Stefano

Co-chair: Ramsés Rodríguez-Rocha

9:30 - 9:50	Topic 4.2 EMBEDDED PIEZOELECTRIC SELF SENSING-BASED SMART NDT TECHNIQUES FOR CONCRETE STRENGTH EVALUATION Seunghee Park, Dong-Jin Kim, Changgil Lee, Seok-Inn Hong
9:50 - 10:10	Topic 4.2 EFFECTS OF TEMPERATURE VARIATION IN ASSESSING THE INTERFACE DELAMINATION BETWEEN CONCRETE AND REBAR USING ULTRASONIC GUIDED WAVES Tao Ruan, Dongsheng Li
10:10 - 10:30	Topic 4.3 MONITORING OF THOMPSON'S BRIDGE BFRP REINFORCED DECK WITH DISCRETE OPTICAL SENSORS Susan E. Taylor, M Sonebi, D Robinson, S Grattan, Tong Sun
10:30 - 10:50	Topic 4.3 MONITORING OF A NOVEL FLEXIARCH BRIDGE SYSTEM WITH SOIL-STRUCTURE INTERACTION M Lydon, Susan E. Taylor, V Sivakumar, D Hughes
10:50 - 11:10	Topic 4.2 STRUCTURE-INTEGRATED FIBRE OPTIC ACOUSTIC EMISSION SENSOR FOR CONCRETE PILE TESTING AND MONITORING Constanze Schilder, Harald Kohlhoff, Detlef Hofmann, Wolfgang R. Habel
11:10 - 11:30	Topic 4.3 THE RESEARCH OF THE PLATFORM FOR BRIDGE VISUAL INSPECTION BASED ON QUADROTOR AIRCRAFT Shuri Cai, Jian Su, Wanheng Li, Xiaojing Wang, Jing Liu, Mohai Yuan

Room 3 / Thursday, December 15

Session 24: Field Applications

Chair: Urs Meier

Co-chair: Gerardo Aguilar

9:30 - 9:50	Topic 7.1 LONG-TERM BEHAVIOR WITH SHM ON CARBON FIBER REINFORCED POLYMERS Urs Meier
9:50 - 10:10	Topic 7.1 MONITORING OF A PILING WALL BY MEANS OF FBG: PART 2 Dario Rinaldis, Paolo Clemente, Michele Caponero, Giuseppe Rossi
10:10 - 10:30	Topic 7.1 AN INTEGRATED MONITORING SYSTEM FOR MODULAR BUILDINGS Amar Seem, Tianxin Zheng, David Laurenson, Yong Lu, Asif Usmani
10:30 - 10:50	Topic 7.1 ENVIRONMENTAL EFFECTS ON LONG-TERM BEHAVIOURSOFTAMAR SUSPENSION BRIDGE Robert Westgate, Ki-Young Koo, Elizabeth Cross, James M. W. Brownjohn
10:50 - 11:10	Topic 6.2 DEVELOPMENT OF A CABLE DAMPER - A TAILOR-MADE DESIGN APPROACH FOR STAY CABLES Peter Furtner, Markus Heim

Poster Presentations

Papers selected by their authors for Poster Presentation are being displayed in a section of the Technical and Commercial Exhibit. They are the following:

Topic 1.5

FATIGUE SENSOR FOR STRUCTURAL HEALTH MONITORING
Mikhail Karuskevich, Tatiana Maslak, Gulzar Seidametova

Topic 4.2

DAMAGE EVALUATION OF CONCRETE BEAM UNDER DYNAMIC LOADING BASED ON PIEZOELECTRIC TRANSDUCER
Linsheng Huo, Xu Li, Hongnan Li

Topic 4.3

DESIGN AND CONFIGURATION OF A LARGE SCALE BRIDGE MONITORING SYSTEM FOR LONG TERM EVALUATION
José Alfredo López-López, Bernardo Hernández-Sánchez, Juan Antonio Quintana-Rodríguez, Francisco Javier Carrión-Viramontes, José-Luis Moreno-Jiménez

Topic 4.3

APPLICATION OF TIME SERIES ANALYSIS FOR BRIDGE MONITORING
Gerardo Rodríguez Gutiérrez, Roberto Gómez-Martínez, David Murià-Vila, Joel Mauricio Cortés Patiño, Marco Antonio Mendoza Salas, Abraham Roberto Sánchez Ramírez, Miguel Ángel Mendoza García

Topic 4.6

IMPLEMENTATION OF CAMCORDERS TO MEASURE DISPLACEMENTS IN STRUCTURES
Carlos H. Huerta-Carpizo, David Murià-Vila

Topic 5.2

THE APPLICATION OF RADAR IN DETECTING PRESTRESSED STEEL REINFORCEMENT
Jing Liu, Xiaoyu He

Topic 5.5

A BAYES-BASED UPDATING MODEL OF TRAFFIC LOADS: APPLICATION TO NANJING 3RD YANGTZE RIVER BRIDGE
Yiming Gu, Shunlong Li, Hui Li

Social Program

The following social events were arranged for and are included in the registration fees of both technical participants and accompanying persons:

Sunday, Dec 11

18:00 - 20:00 Welcome Reception

Monday, Dec 12

08:30 - 9:00 Opening Ceremony

Tuesday, Dec 13

12:00 - 18:00 Tour to Tulum, Conference Dinner and show in Xcaret

Thursday, Dec 15

12:00 - 12:30 Closing Ceremony

Venue Information

Cancún is a worldwide-known destination because of its beautiful beaches, excellent hotels and exiting nightlife. Cancún offers water sports of all kinds, and it is famous for the fantastic Caribbean Sea color and its marine life. Winter weather is perfect for outdoor activities with only scattered night rains and temperature ranging from 20 to 31°C (68-87°F).

The SHMII-5 is being held at The Ritz-Carlton, Cancún. At the Ritz-Carlton, a spirit of elegance and enchantment prevails. Explore an underwater dreamland, marvel at nearby Mayan sites or simply relax on the exceptional resort's white-sand beachfront. Just minutes from many lively and leisurely attractions, the Ritz-Carlton luxury hotel features 365 guestrooms overlooking the sea, a full-service spa, an impressive culinary center, award-winning restaurants and a stunning beach club featuring the largest beach in Cancun.

The address of the hotel is:

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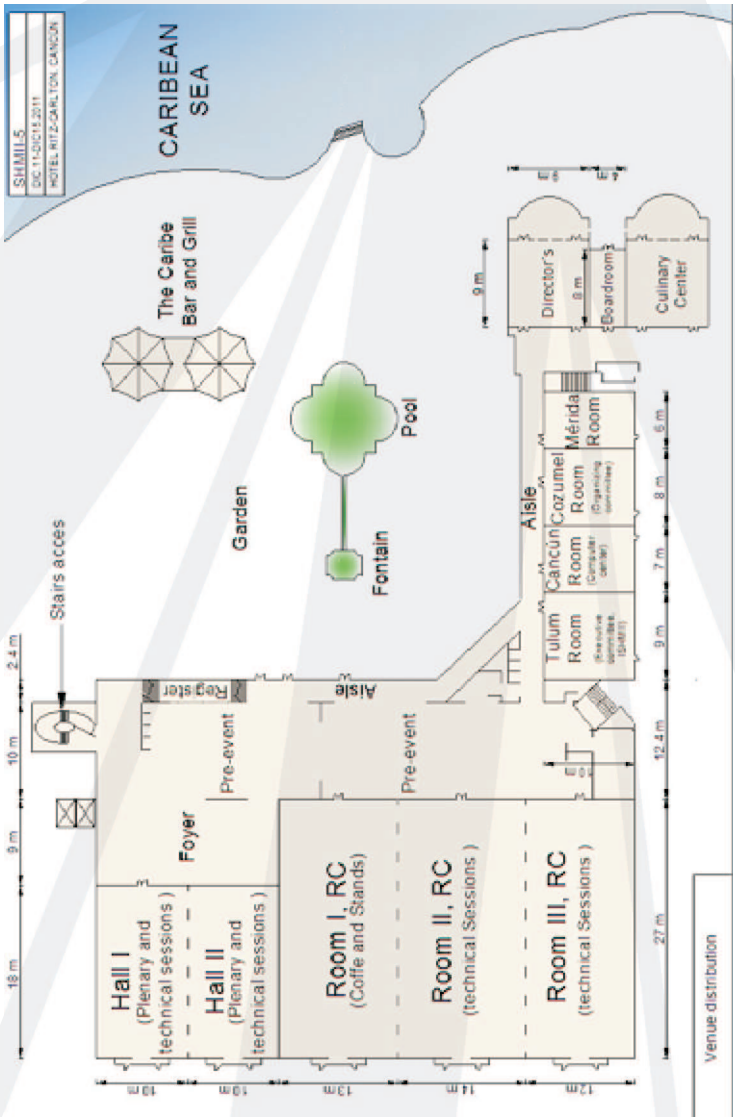
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Cancun, Quintana Roo 77500 Mexico Phone: 52 998 881 0808

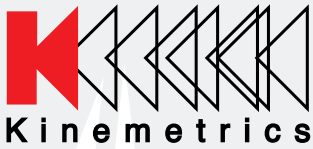
The Ritz-Carlton Hotel Conference Space



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Exhibitors







5th
DECEMBER 11-15

**INTERNATIONAL CONFERENCE
ON STRUCTURAL HEALTH MONITORING
OF INTELLIGENT INFRASTRUCTURE**

CANCÚN MÉXICO 2011

